

Amendment and Response

Applicant: Christopher J. Zwettler
Serial No.: 10/763,748
Filed: January 23, 2004
Docket No.: 10333US01

Title: SIDE ACTING DRIVE SHAFT ENGAGEMENT FOR A DATA CARTRIDGE

REMARKS

This Amendment is responsive to the Office Action mailed January 12, 2006, in which claims 1-12 were rejected. With this Response, claims 1, 2, 5, 8, 9, 10, and 12 have been amended, claims 3 and 4 have been cancelled without prejudice, and claims 13-22 have been added. Claims 1-2 and 5-22 are pending in the application and are presented for reconsideration and allowance.

Claim Rejections under 35 U.S.C. § 112

Claims 9-11 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, claim 9 was cited by the Examiner as including the limitation "the slot" without antecedent basis. With this Amendment, claim 9 has been amended to depend from claim 8, which introduces "a slot." Accordingly, "the slot" limitation of claim 9 is believed to now have proper antecedent basis, and withdrawal of the rejections under 35 U.S.C. §112, second paragraph, of claim 9 and of claims 10 and 11, which each depend from claim 9, is respectfully requested.

Claim Rejections under 35 U.S.C. §102

Claim 1 was rejected under 35 U.S.C §102(b) as being anticipated by Zwettler, U.S. Patent No. 6,457,664 ("Zwettler"). With this Amendment, claim 1 has been amended to incorporate the limitations of dependent claims 3 and 4. Accordingly, claim 1 now recites a data storage cartridge including a housing, a driven roller, and a driven member. The housing has a top and a front adjacent the top. The top defines a driven roller opening that extends to the front. The driven roller is rotatably mounted in the housing. The driven member is accessible by the drive via the driven roller opening and is operatively connected to the driven roller. Zwettler fails to disclose such limitations.

In particular, Zwettler fails to disclose a housing having a top and a front adjacent the top where the top defines a driven roller opening that extends to the front as recited in claim 1. Zwettler relates to a hybrid belt-driven data storage cartridge 20 and includes a

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housing 22, a drive roller 58, and a drive belt 64. The drive roller 58 is axially accessible by a drive via an opening 110 (Figure 4A; col. 9, lines 10-14). The opening 110 of Zwettler is fully defined by and within the interior of a second major surface 38 of the housing 22. Therefore, the opening 110, which provides access to a member to be driven (i.e., the driven member as recited in claim 1), does not extend to any of the surfaces adjacent the second major surface 38, much less to a front 32 of the housing 22. Consequently, Zwettler does not disclose a housing having a top and a front adjacent the top, the top defining a driven roller opening that extends to the front where a driven member is accessible by the drive via the driven roller opening as recited in claim 1.

Moreover, Zwettler does not otherwise suggest such an opening. Rather, Zwettler describes how the drive roller 58 is "axially accessible" such that the "engagement of the drive roller 58 is accomplished by axially directing a rotatably driven, splined drive chuck or motor (not shown) toward the drive roller 58" (col. 9, lines 15-20). Since Zwettler teaches direct axial movement of the motor through the opening 110 to contact the drive roller, Zwettler provides no motivation to extend the opening 110 to the front or other surface adjacent the second major surface 38 through which the opening 110 is formed. In fact, Zwettler teaches against radial movement of drive members to engage the driver roller 58 as such movement provides for additional speed and power losses as opposed to axially accessed motor members (col. 9, lines 20-32). Consequently, Zwettler also fails to teach or suggest an opening as defined in the top of the housing and extending to the front as recited in claim 1.

For at least these reasons, claim 1 is believed to be allowable over Zwettler. Therefore, Applicant respectfully requests the withdrawal of the rejections under 35 U.S.C. §102(b) of independent claim 1.

Claim 2 was also rejected under 35 U.S.C. §102(b) as being anticipated by Zwettler. Claim 2 depends from claim 1, which as described above is believed to be allowable.

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Therefore, claim 2 is also believed to be allowable, and the withdrawal of the rejection of claim 2 under 35 U.S.C. §102(b) is respectfully requested.

Claim 12 was rejected under 35 U.S.C. §102(b) as being anticipated by Kimizuka et al., U.S. Patent No. 4,445,651 ("Kimizuka"). Kimizuka fails to teach or suggest a cartridge including "a driven member maintained within a housing" or "moving the drive member from its first position to its second position by moving the cartridge in the first direction, wherein movement of the drive member from the first position to the second position is in a second direction generally perpendicular to the first direction, and wherein the drive member is stationary in the second direction prior to interaction with the driven member as recited in claim 12. Kimizuka fails to disclose these features of claim 12.

Kimizuka relates to a tape cassette including a casing 21 and a pair of hubs 29a and 29b symmetrically mounted within the casing 21 (col. 3, lines 49-51). Circular shaped openings 33a and 33b are formed entirely in the bottom surface of the lower half 21b of the casing 21. The openings 33a and 33b permit the hubs 29a and 29b to extend out of the casing 21 so that they can mate with the driving member (e.g., the drive shafts 42a and 42b), which is external to the cassette (col. 4, lines 1-8). Since the hubs 29a and 29b extend out of the casing 21, neither hub 29a nor 29b can be considered to be "a driven member maintained within a housing" where the driven member received rotational movement translated from a drive member as recited by claim 12.

In addition, when the cassette is inserted into the drive, Kimizuka discloses that "the drive shafts 42a and 42b are pressed down by the under surface of the cassette casing 21" lowering the drive shafts against their spring bias until the drive shafts 42a and 42b align with the openings 33a and 33b of the cassette, at which point the drives shafts move back up to their biased position (col. 5, lines 14-30). This functionality of Kimizuka contrasts the features recited in claim 12. More specifically, the drive shafts 42a and 42b move from a first position to a second position in a direction transverse to the movement of the cartridge upon interaction with "under surface of the cassette housing." Accordingly, the drive shafts

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42a and 42b move in the second direction (i.e., the direction perpendicular to the first direction in which the cassette is inserted into the drive) well before they interact with gears 31a and 31b. Therefore, the drive shafts 42a and 42b are not "stationary in the second direction prior to interaction with the driven member" as recited in claim 12.

For at least these reasons, claim 12 is believed to be allowable over Kimizuka. Therefore, Applicant respectfully requests that the rejections under 35 U.S.C §102(b) of independent claim 12 be withdrawn.

Claim Rejections under 35 U.S.C. §103

Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Zwettler in view of Kimizuka. Amended independent claim 5 relates to a data storage cartridge having tape driven by a drive belt and drive combination including a data storage cartridge. The data storage cartridge includes a driven member operatively connected to the driven roller, whereby insertion of the cartridge in the drive in a second direction generally perpendicular to the first direction interfaces the inclined engagement surface with the drive member to move the drive member in the first direction. Both Zwettler and Kimizuka fail to teach or otherwise suggest such limitations.

In particular, Zwettler discloses a drive chuck 140 being movable along its rotational axis for axially engaging the drive roller 58 (col. 10, lines 44-52; Figure 6). Accordingly, the drive chuck 140 movement is driven by motor to engage the drive roller 58, and the drive chuck 140 axially engages with the drive roller 58. As such, insertion of the cartridge in the drive in a first direction does not interface an inclined surface with the drive chuck to move the drive chuck in a first direction perpendicular as recited in claim 5. Rather, the only inclined surface on the drive roller 58 is for engaging the drive chuck 140 to transfer rotational forces and thereby prevent movement of the drive chuck 140 relative to the drive roller 58. No inclined surface as recited in claim 5 is defined on the drive roller 58 for moving the drive chuck 140 in a second direction. For at least these reasons, Zwettler fails to teach or otherwise suggest the features of claim 5.

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Kimizuka fails to alter this analysis. As described with respect to claim 12, Kimizuka teaches sliding the drive shafts 42a and 42b along the under surface of the cassette casing 21 until the drive shafts 42a and 42b align with the openings 33a and 33b of the cassette, at which point the drive shafts 42a and 42b move back up to their biased position (col. 5, lines 14-30). In this manner, movement of the drive shafts 42a and 42b is effectuated by interfacing with a front edge of the casing and subsequent alignment with openings 33a and 33b. The hubs 29a and 29b do not define inclined surfaces that interface with and move the drive shafts 42a and 42b in the second direction. Rather, the only inclined surfaces on hubs 29a and 29b are configured to engage the drive shafts to prevent movement of the 42a and 42b relative to hubs 29a and 29b. Therefore, Kimizuka fails to teach or otherwise suggest that "insertion of the cartridge in the drive in a second direction generally perpendicular to the first direction interfaces the inclined engagement surface [of the driven member] with the drive member to move the drive member in the first direction" as recited in claim 5.

For at least these reasons, the cited references fail to teach or otherwise suggest the limitations of independent claim 5. Therefore, independent claim 5 is believed to be allowable, and Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. §103(a) of independent claim 5.

Claims 6 and 9-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Zwettler in view of Kimizuka. Claims 6 and 9-11 each depend from independent claim 5, which as described above is believed to be allowable over the cited references. Therefore, dependent claims 6 and 9-11 are also believed to be allowable over the cited references. Accordingly, Applicant respectfully requests the rejections of claims 6 and 9 under 35 U.S.C. § 103(a) be withdrawn.

Moreover, claims 6 and 9-11 present additional patentably distinct subject matter. For example, claim 11 recites that the housing includes "a top surface and a front" where "the driven roller opening is defined by the top surface and is positioned over the driven member" and wherein "the driven roller opening extends to the front." For similar reasons

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as described with respect to claim 1, Zwettler fails to teach or otherwise suggest such limitations. Kimizuka also fails to teach or suggest such limitations. Rather Kimizuka discloses that the cassette openings 33a and 33b, which provide access to the hubs 29a and 29b, are entirely formed in the a single planar, bottom surface and do not extend to any front, back, or adjacent side. Consequently, Zwettler and Kimizuka fail to teach or otherwise suggest a driven roller opening formed in a top surface and extending to the front as recited by claim 11. This analysis further supports allowance of claim 11.

Claims 7 and 8 are rejected under 35 U.S.C. §103(a) as being unpatentable over Zwettler in view of Kimizuka as applied to claims 5 and 6 above, and further in view of Zuckschwert et al., U.S. Patent No. 3,934,841 ("Zuckschwert"). Each of claims 7 and 8 depend from independent claim 5, which as described above is believed to be allowable. Zuckschwert fails to alter this analysis. Rather, Zuckschwert relates to a tape drive that receives a cassette such that the winding hubs 6, 7 receive the tape spools within the tape cassette 9 in axial manner (col. 2, lines 42-49: Figures 2-4). The axial attachment of the hubs to the cassette fails to teach or otherwise suggest an inclined engagement surface of the tape spools that causes movement of the winding hubs 6, 7 for similar reasons as described with respect to the axial engagement of Zwettler. Therefore, Zuckschwert also fails to teach or otherwise suggest the features of independent claim 5 from which claims 7 and 8 each depend. Therefore, for at least these reasons, claims 7 and 8 are also believed to be allowable. Accordingly, withdrawal of the rejections under 35 U.S.C. §103(a) is respectfully requested.

New Claims

With this Amendment, new claims 13-22 have been added to recite features that are supported by the originally-filed specification. Therefore, no new matter has been added. Each of claims 13-22 depend from independent claims 1, 5, or 12, which, as described above, are believed to be allowable. Accordingly, new claims 13-22 are also believed to be allowable.

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Other Amendments

Claim amendments not specifically discussed have been made to correct various informalities not related to patentability.

The specification was amended to correct various informalities not related to patentability. Such amendments do not add new matter. In particular, the amendment to the end of the paragraph beginning on page 4, line 14, is merely made to correct typographical informalities to bring the specification in accordance with the originally filed claims and abstract.

CONCLUSION

In light of the above, Applicant believes that all pending claims 1-2 and 5-22 are now in condition for allowance. Early and favorable consideration is requested. Any inquiry regarding this Amendment and Response should be directed to the below-named representative.

Respectfully submitted,

Date: 4/10/06


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